Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently amended) A point of care miniature analytical device with thermal regulation comprising:

a cartridge comprising one or more portions constructed of a material, wherein the one or more portions define an array of temperature-controlled zones including reactants, wherein each said temperature-controlled zones is constrained by cartridge portions that surround an area of space in which a reactant is contained and confine the reactant from flowing into other of said temperature-controlled zones, and wherein the cartridge portions include clear or translucent portions that allow direct irradiation of reactant molecules to facilitate thermal regulation of the reactants and to transmit light through the reactants;

an array of infrared radiation emitting heat sources, wherein the array of heat sources is positioned to correspond to the array of temperature-controlled zones so that each heat source is arranged to provide temperature regulation to a corresponding temperature-controlled zone, and wherein one or more of the heat sources emit localized radiation to provide heating in the corresponding temperature-controlled zone;

an optical temperature monitor, not in contact with the cartridge and disposed adjacent to a portion of the cartridge surrounding the temperature controlled zones, that monitors reactant temperature by measuring electromagnetic radiation;

a controller comprising a modulator;

a power supply configured to supply drive current to the ~~infrared light source~~ array of heat sources and ~~a modulator~~ coupled to the controller to provide that current from the power supply achieves the desired thermal regulation in the temperature-controlled zones; ~~and~~

a feedback loop configured to provide measured temperatures to the controller, and to modulate the power supply to drive the infrared light heat sources to achieve a desired temperature with a smooth control curve at the desired temperature, and

an instrument for measurement of electromagnetic emission obtained from irradiation of the reactants with the infrared radiation emitting heat sources, wherein the transmission of

infrared radiation through the reactants allows a determination of a concentration of a material within the reactants.

2. (Canceled)

3. (Currently Amended)A point of care miniature analytical device with thermal regulation according to claim 1 ~~2,~~ wherein : the array of infrared radiation emitting heat sources ~~the electromagnetic radiation emitters~~ comprise vertical cavity surface emitting laser light sources.

4-5. (Canceled)

6. (Currently Amended)A point of care miniature analytical device with thermal regulation according to claim 1 ~~2,~~ wherein: the array of infrared radiation emitting heat sources ~~the electromagnetic radiation emitters~~ comprise at least one light source chosen from a vertical cavity surface emitting laser light source, a light emitting diode, an infrared lamp, an infrared laser, and infrared diode laser.

7. (Currently Amended) A point of care miniature analytical device with thermal regulation according to claim 6, wherein:

at least one of the infrared radiation emitting heat sources ~~electromagnetic radiation emitters~~ in the array of heat sources generates infrared light of a different wavelength from the remainder of the infrared radiation emitting heat sources .

8. (Previously presented) A point of care miniature analytical device with thermal regulation according to claim 6, wherein:

the at least one light source generates infrared light with a wavelength of at least 0.775 micrometers.

9. (Previously presented) A point of care miniature analytical device with thermal regulation according to claim 6, wherein:

the at least one light source generates infrared light with a wavelength of at most 7000 micrometers.

10.-15. (Canceled)

16. (Currently Amended) A point of care miniature analytical device with thermal regulation according to claim [[15,]] 1, wherein:

the controller modulates the power supply based on a temperature measured from the zones.

17. (Previously presented) A point of care miniature analytical device with thermal regulation according to claim 1, further comprising:

an array of temperature monitors, wherein the array of temperature monitors is positioned to correspond to the array of temperature-controlled zones.

18. (Previously presented) A point of care miniature analytical device with thermal regulation according to claim 1, wherein:

the reactants comprise assay elements for body fluid analysis.

19.-20. (Canceled)

21. (Withdrawn) A method for providing thermal regulation to a miniature analytical device comprising:

providing a cartridge comprising one or more portions constructed of a material, wherein the one or more portions define an array of temperature-controlled zones including reactants, and wherein each of said temperature-controlled zones is constrained by cartridge portions that surround an area of space in which a reactant is contained and confine the reactant from flowing into other of said temperature-controlled zones;

positioning an array of heat sources to correspond to the array of temperature-controlled zones so that each heat source is arranged to provide temperature regulation to a corresponding

temperature-controlled zone, and wherein one or more of the heat sources emit localized radiation to provide heating in the corresponding temperature-controlled zone;

monitoring reactant temperature; and

modulating the array of heat-sources to regulate temperature in one or more of the temperature-controlled zones;

whereby each temperature-controlled zone is controllable to a designated temperature.

22. (Withdrawn) A method according to claim 21, wherein said localized heat sources transmit infrared light through the reactants, thereby facilitating measuring one or both of concentration or temperature within the temperature-controlled zone.

23. (Canceled)

24. (Currently Amended) A point of care miniature analytical device with thermal regulation according to claim [[23,]]1, wherein:

the array of heat sources provides a reactant temperature that is one or both of achieved with a smooth control curve or maintained at a desired temperature.